THE PROGRESS OF SCIENCE

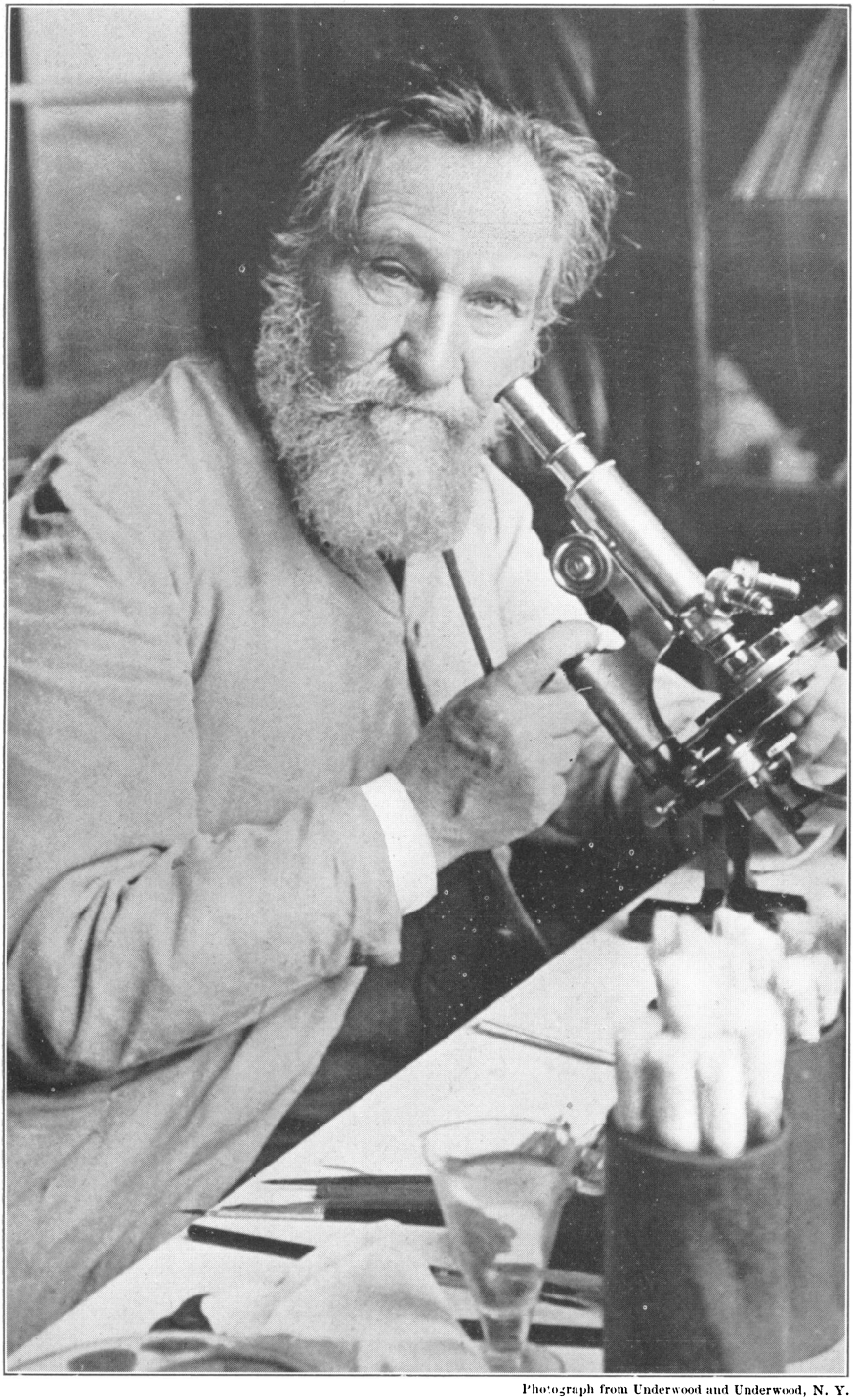
THE EPIDEMIC OF INFANTILE PARALYSIS

THE epidemic of infantile paralysis centering in Brooklyn has not attracted more attention than it deserves, although the 2,000 cases and 400 deaths which had occurred up to July 18 are not large in comparison with the waste of child life to which we submit. About 200,000 infants and about an equal number of children and young people die needlessly each year in this country. That the deaths are due to ignorance and neglect is evident from the fact that three times as many children die in Fall River and Patterson as in some other cities. It is quite possible that through the vigorous hygienic and sanitary measures now being undertaken in New York City more lives will be saved than are lost through the epidemic.

The disease is startling through its comparative newness, its method of spreading, the futility of any treatment, its symptoms, the high death rate and the permanent after effects which may ensue. The best available account of the nature of the disease, the manner of its conveyance and the means of prevention, is contained in an address given before the New York Academy of Medicine on June 13, by Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, whose researches have contributed largely to what we know concerning infantile paralysis, or poliomyelitis, and spinal meningitis. Dr. Flexner tells us, in his address, which is printed in the issue of *Science* for July 21, that infantile paralysis is an infectious disease caused by an invasion of the spinal cord and brain by a minute filterable microorganism, which has now been secured in artificial cultures and is visible under the higher powers of the microscope. The virus exists not only in the central nervous organs, but also on the mucous membranes of the nose, throat and intestines. Less frequently it occurs in other organs and it has been found in the blood. The virus can be detected by inoculation tests upon monkeys, though with so much difficulty that ordinary bacteriological tests can not be employed for the discovery of the disease. In this manner it has, however, been determined that healthy persons may carry and spread the infection.

The virus of infantile paralysis leaves the infected patient through the secretions of the nose, mouth and intestines and enters the body as a rule, if not exclusively, by way of the mucous membranes of the nose and throat. Since epidemics of infantile paralysis always arrive during a period of warm weather, they have been thought to be connected with insect life. This has, however, been disproved, except in so far as domestic flies and other insects may serve as mechanical carriers. The paralytic diseases of domestic animals and pets are quite different from infantile paralysis and these animals must be acquitted of being hosts.

Infantile paralysis is one of the diseases in which insusceptibility is conferred by a previous attack and protection has been conferred on monkeys by inoculation with small amounts of the virus and by serum treatment. Promising results are said to have been obtained in France on men but the quantity of human immune serum is very limited and no animal except the monkey seems capable of yielding the immune serum, and the monkey is not a practical animal from which to obtain supplies. The only drug which has shown any useful degree of activity is hexa-



Photograph from Underwood and Underwood, N. Y.

ELIE METCHNIKOFF

The distinguished Russian Zoologist and Bacteriologist, since 1888 a Member of the Pasteur Institute, Paris. He died on July 15, aged seventy-one years.

methylenamin, but in monkeys this has proved effective only very early in the course of the inoculation and only in a part of the animals treated. The epidemic must be controlled by general sanitary means, though medical and surgical care may assist in recovery. Protection can best be secured through the discovery and isolation of those ill of the disease and the control of those persons who have associated with the sick and whose business calls them away from home. The usual means by which the secretions of the nose and throat are disseminated are through kissing, coughing and sneezing. The early detection and isolation of infantile paralysis in all its forms with the attendant control of the households from which they come is the chief measure of staying the progress of the epidemic.

CINCHONA AS A TROPICAL STATION FOR AMERICAN BOTANISTS

PROFESSOR DUNCAN S. JOHNSON, of the Johns Hopkins University, it will be remembered, contributed to the POPULAR SCIENCE MONTHLY (December, 1914, and January, 1915) two illustrated articles on the Cinchona Botanical Station. He now writes to *Science* that it is practically assured that some fourteen American universities, botanical foundations and individual botanists are to cooperate with the Jamaican government in the support of Cinchona as a tropical station. A move to aid in the support of Cinchona, initiated by the Botanical Society of America in 1912, was not consummated, in consequence of the earlier leasing of the station to the British Association for the Advancement of Science. The Jamaican authorities and the British Association seem quite willing, under present conditions, to allow the lease to pass into American hands after October next.

The attention of American investigators should, therefore, be directed to the facilities for botanical research offered by this oldest and best known botanical laboratory in the western tropics. Among the advantages of this station for American botanists are the greatly varied flora and series of types of vegetation; the proximity of a library and of two other botanical gardens, beside that surrounding the laboratory. The location of Cinchona is a very fortunate one for American botanists from a practical standpoint. It is in an English-speaking country with good roads, a stable government and adequate quarantine service. It is also within easy reach of our eastern seaports, from several of which the round trip to Jamaica and Cinchona can be made in summer for $75.00 or less for transportation. It is altogether probable that any American botanist wishing to work at Cinchona will be granted the privilege by requesting it of the colonial government of Jamaica through Superintendent William Harris, F.L.S., Hope Gardens, Kingston, Jamaica.

Dr. C. H. Farr of Columbia University calls attention to the fact that a tropical rain-forest presents peculiar conditions. The plants do not show the marked periodicity characteristic of colder and dryer regions. Where the temperature and rainfall are so nearly constant at all times of the year as at Cinchona, one is likely to find all of the stages in the life history of a species on almost any single day, and conditions are favorable for collecting the year around. To the cytological collector a compound microscope is an absolute necessity; and such a permanent station as that at Cinchona, therefore, seems to be the only solution to the accessibility of such regions. The buildings at Cinchona, including two cottages, a two-room laboratory, the drying house, the dark room, the greenhouses and the garden, were all in good condition when he left there in December last. Through the kind offices of Mr. William Harris at Hope Gardens servants were made available, and his personal needs adequately